**The Special Case of Valuing Banks and Financial Institutions[[1]](#footnote-1)
Quick Sheet[[2]](#footnote-2)**

Banks and financial institutions differ from other firms in that their productive resources are more closely associated with their equity components than with assets. The following represents the equity variant of asset based metrics valuing equity based firms.

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| --- | --- |
| **Commonly applied valuation metric (asset based)** | **Metric as applied to banks and financial firms** |
| NOPLAT = EBIT (1-T) | Net Income (NI) = EBIT – Interest - Tax |
| FCF = $NOPLAT+Dep- ∆NWC- NCS$ | $CFE\_{t}= NI\_{t}- ∆TE\_{t} + OCI\_{t}$ ([[3]](#footnote-3)) |
| Invested Capital (IC) = FA + NWC | Total Equity (TE) = Total Assets – Total Liabilities |
| Net Investment = ∆ IC = IC1 – IC0 + Dep1 | Net Investment = ∆ TE = TE1 – TE0 |
| Investment Rate (IR) = Net Invest/NOPLAT | IR = Net Invest/NI |
| Enterprise Value (EV) = Mkt Cap Eqty + Mkt Val Debt - Cash | Enterprise Value (EV) = Mkt Cap Equities - Cash |
| ROIC = $\frac{NOPLAT}{IC}$ | ROE = $\frac{NI}{TE}$ |
| WACC = $\left(\frac{E}{V} x R\_{E}\right) + \left(\frac{P}{V} x R\_{P}\right) + \left(\frac{D}{V} x R\_{D}\right)\left(1-T\_{C}\right)$ | COE = RE = RF + β(RM-RF) *CAPM construction*  = $\frac{D\_{1}}{PPS\_{0}}+g$ *Modigliani & Miller corollary* |
| PVDCF (NOPLAT) =$\sum\_{}^{}\frac{NOPLAT\_{t}}{\left(1+WACC\right)^{t}}$ | PVDCF (NI) = $\sum\_{}^{}\frac{NI\_{t}}{\left(1+ke\right)^{t}}$ |
| PVDCF (FCF) =$\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}$ | PVDCF (CFE) =$\sum\_{}^{}\frac{CFE\_{t}}{\left(1+k\_{e}\right)^{t}}$ |
| CVKVD = $\frac{NOPLAT\_{1}\left(1-\frac{g}{ROIC}\right)}{WACC-g}$ | CVKVD = $\frac{NI\_{1}\left(1-\frac{g}{ROE}\right)}{k\_{e}-g}$ |
| CVDG = $\frac{NOPLAT\_{1}}{WACC-g}$ | CVDG = $\frac{NI\_{1}}{k\_{e}-g}$ |
| PVCV = $\frac{CV}{\left(1+WACC\right)^{t}}$ | PVCV = $\frac{CV}{\left(1+k\_{e}\right)^{t}}$ |
| ValueKVD) =$\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}+ \frac{\frac{NOPLAT\_{1}\left(1-\frac{g}{ROIC}\right)}{WACC-g}}{\left(1+WACC\right)^{t}}$  | ValueKVD =$\sum\_{}^{}\frac{CFE\_{t}}{\left(1+COE\right)^{t}}+ \frac{\frac{NI\_{1}\left(1-\frac{g}{ROE}\right)}{COE-g}}{\left(1+COE\right)^{t}}$ |
| ValueDCF/FCF = $\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}$ + $\frac{ \frac{FCF\_{1}}{WACC-g}}{\left(1+WACC\right)^{t}}$ | ValueDCF/CFE =$ \sum\_{}^{}\frac{CFE\_{t}}{\left(1+COE\right)^{t}}$ *+* $\frac{ \frac{CFE\_{1}}{COE-g}}{\left(1+COE\right)^{t}}$ |
| ValEπ = IC0 + $\sum\_{}^{}\frac{IC\_{t-1}\left(ROIC-WACC\right)}{(1+WACC)^{t}}$ + $\frac{ \frac{IC\_{0} x (ROIC\_{1}-WACC\_{1})}{WACC\_{1} - g}}{(1+WACC)^{t}}$  | ValueEπ $=TE\_{0}+ \sum\_{}^{}\frac{TE\_{t}\left(ROE-COE\right)}{\left(1+COE\right)^{t}}+\frac{\frac{TCE\_{0} x \left(ROE-COE\right)}{COE - g}}{\left(1+COE\right)^{t}}$ |
| VALFMM = $\sum\_{}^{}\frac{FCF\_{t}}{\left(1+WACC\right)^{t}}$ + $\frac{ EBIT\_{1} x FMM}{\left(1+WACC\right)^{t}}$ | ValueFMM =$ \sum\_{}^{}\frac{CFE\_{t}}{\left(1+COE\right)^{t}}$ *+* $\frac{ EBIT\_{1} x FMM}{\left(1+COE\right)^{t}}$ |
| VALAPV - The APV Model isn’t relevant with respect to Banks and Financials as these firms do not use debt as a part of their capital structure. |

1. This primer is intended to present an abbreviated discussion of the included financial economic concepts and is not intended to be a full or complete representation of them or the underlying finance or economic foundations from which they are built. [↑](#footnote-ref-1)
2. This material was developed by Richard Haskell, PhD (rhaskell@westmisntercollege.edu), Assistant Professor of Finance, Gore School of Business, Westminster College, Salt Lake City, Utah (2016). [↑](#footnote-ref-2)
3. OCI = other comprehensive income such as unrealized gains or losses on certain equity and debt investments. [↑](#footnote-ref-3)